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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/571,868	11/09/2006	Elmar Stumpf	2003P01328WOUS	6955

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EXAMINER

MASHRUWALA, NIKHIL P

ART UNIT	PAPER NUMBER
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3749

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04/01/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/571,868	Applicant(s) STUMPF, ELMAR	
	Examiner NIKHIL MASHRUWALA	Art Unit 3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 18-34 is/are pending in the application.
- 4a) Of the above claim(s) 16 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 18-33 is/are rejected.
- 7) ☒ Claim(s) 34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/14/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Receipt of applicant's amendment of 12/19/2008 is acknowledged.

Response to Arguments

1. Applicant's arguments filed on 12/18/2008 have been fully considered but they are not persuasive. The applicant argues that the prior art reference of Stumpf, Elmar (DE 101 61154) does not cite a double walled structure of the evaporator tube suitable. The specification (col 2, para 0013) discloses a composite material for the evaporation tube which is a chemically inactive inner material (e.g high-grade stainless steel) and an external (outer material) suitable for heat-conduction and the same is defined by claim 10. The specification of the invention of the applicant and the claims 15 & 18 discloses the same limitations of the prior art reference of Stumpf. The definition of a 'composite material' per dictionary by Goetzel (of materials) and by Romplexikon (T-Z) also justifies 'composite material' as different material layers having better chemical and physical properties in composite form of the material such as disclosed by the tube material of the said prior art. Hence, a composite material structure made from Stainless Steel for the inner part of the evaporator tube and a heat-conductive material (like copper) for the outer part of the evaporator tube would functionally produce the same result like having a double wall tube structure.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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3. The term "substantially" between 50 deg and 70 deg in claim 20 is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Need appropriate correction

4. The term "at least greater than about 15 deg to 20 deg" in claim 23 is a relative term which renders the claim indefinite. The term "at least greater than about 15 deg to 20 deg" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Need appropriate correction.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 13-15, 18 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by German publication DE 10161154 A1 of Stumpf, Elmar et al.

For claim 13, Stumpf shows a liquid gas burner in (figs 1-3, claim 1), having an evaporator for vaporizing liquid fuel. This vaporizer has two equal tubular sections (1 & 2) as double loop made out of a composite material structure (see explanation above and, col 2, para0013 and claim 10) an interior material and an external material. Stumpf shows a gas discharging recess (a channel/nozzle 4, per claim 3) in the wall of the

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tubular sections (1 & 2). Both the loops of the tubular section of the evaporation chamber are limited by a boundary wall per fig 1.

For claims 14-15 and 18, as applied to 13 above, Stumpf shows two different types of composite material for the tubular sections 1 & 2 (col 2, para 0013 and claim 10). Chemically inactive material for interior wall to be made of high-grade steel, while for the external material for the outer wall to be well heat conductive which would be inherent to consider copper (or per choice in design) as copper is highly heat-conductive and most common in use for burners.

For claim 24, Stumpf shows the evaporator as two tubular sections 1 & 2 per figs 1-3.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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9. Claims 19-23 and 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stumpf in view of US patent no 4,419,074 of Schuetz.

For claims 19-21, 25 and 30, Stumpf does not disclose a tapered edge gas discharge opening from the evaporation chamber where as Schuetz discloses a tapered edge gas opening substantially conical discharge channel 2 per fig 3 having a narrow (constriction point/section) inlet 2 in direction of arrow B of the gas flow in the inner wall the nozzle plate 4 (see abstract) so as to give 10 deg angle to the out going jet from the nozzle plate 4 into the throat area 8. The approximate measure of this conical angle per drawing is about 50 deg. It would have been obvious to a person of ordinary skill in the art at the time invention was made to modify such tapered edge& conical gas inlet opening from the evaporation chamber to Stumpf in view of Schuetz so as to get sufficient gas vaporization out of the chamber through the constriction point of the tapered conical gas inlet.

For claim 22, Schuetz discloses a hollow-cylindrical shape gas opening 2 at the constriction area 2 per fig 3 inside the nozzle plate 4.

For claim 23, as discussed above in claim 22, examiner notes that claims 22 and claim 23 are alternative embodiments (drawings 3 and 4 respectively) The examiner has interpreted them as being obvious variations, and therefore claim 23 is rejected as being obvious over the nozzle design shown by Stumpf in view of Schuetz (claims 19-22). If it were determined that the embodiments are patentably distinct, a species requirement would be necessary. Also refer Optimization of Ranges per MPEP 2144.04

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for the claimed limitation of a discharge cone angle to be at least more than 15 deg (or 20 deg.) which would reject the said claim limitation.

Optimization Within Prior Art Conditions or Through Routine Experimentation

Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%.); see also Peterson, 315 F.3d at 1330, 65 USPQ2d at 1382 ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."); In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969) (Claimed elastomeric polyurethanes which fell within the broad scope of the references were held to be unpatentable thereover because, among other reasons, there was no evidence of the criticality of the claimed ranges of molecular weight or molar proportions.). For more recent cases applying this principle, see Merck & Co. Inc. v. Biocraft Laboratories Inc., 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989); In re Kulling, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990); and In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997).

For independent claim 28, as discussed in claim 13 above, Stumpf discloses a gas burner in (figs 1-3, claim 1) running in liquid, having an evaporator for vaporizing liquid fuel. This vaporizer has two equal tubular sections (1 & 2) as double loop made out of a composite material structure (para 0013 and claim 10), an interior material wall and an external material wall of two different materials. Stumpf also discloses a gas discharging recess (a channel/nozzle 4, per claim 3) in the wall of the tubular sections (1 & 2) so as to produce a gas jet. Both the loops 1 & 2 of the tubular section of the evaporation chamber are limited by a boundary wall per fig 1. Stumpf does not disclose its gas discharge opening 4 to be a tapered opening from the evaporation chamber connected to a constriction point formed in said gas discharge channel. Cone burner per fig 3 of Schuetz discloses a tapered gas discharged opening 2 from the chamber

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having a very narrow (constriction point/section) inlet in direction of arrow B of the gas flow. It would have been obvious to a person of ordinary skill in the art at the time invention was made to modify such tapered & narrower gas inlet opening from the evaporation chamber to Stumpf in view of Schuetz so as to get sufficient gas vaporization out of the chamber through the conical point of constriction point.

For claim 33, the combination of Stumpf and Schuetz as discussed above in claims 13 and 28, discloses all the limitations of this claim.

For claim 29, Stumpf shows the evaporator as two tubular sections 1 & 2 per figs 1-3.

10. Claims 26-27 and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stumpf in view of Schuetz as applied to claim 13 and 28 above, and further in view of patent DE 197 43 464 of Baarda G J. Neither Stumpf nor Schuetz disclose a gas jet opening having a flow cross section area larger than a flow cross-section formed at constriction point. Baarda discloses such venture nozzle having a funnel shape discharge nozzle 1 per fig 1 having larger cross-section flow area at the funnel than at constriction point 4. It would be obvious for person of ordinary skill in the art at the time the invention was made to provide a larger flow cross-section at the outlet discharge to Stumpf in view of Baarda so that a venturi effect can be formed at the nozzle tip.

Allowable Subject Matter

11. Claim 34 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art of Stumpf, Schuetz and Baarda disclose the current art for a gas burner for liquid fuels.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NIKHIL MASHRUWALA whose telephone number is (571)270-3519. The examiner can normally be reached on Monday thru Friday- 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven McAllister can be reached on 571-272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nikhil Mashruwala/
Examiner, Art Unit 3749

/Steven B. McAllister/
Supervisory Patent Examiner, Art Unit 3749